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STUDIES OF NEOTROPICAL COMPOSITAE–VI. NEW SPECIES OF EUPATORIEAE FROM BELIZE, HISPANIOLA, AND PERU

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ABSTRACT

Ageratina nubicola Pruski & Clase, sp. nov., from Hispaniola, **Fleischmannia mayana** Pruski, sp. nov., from Belize, and **Mikania holmesiana** Pruski, sp. nov., from Peru are described and compared to their closest relatives. The genus *Carminatia* Moc. ex DC. is newly reported in Honduras.

KEY WORDS: *Ageratina,* Andes, Asteraceae, Belize, *Carminatia*, Central America, Cerro Tayu, Compositae, Cuba, Dominican Republic, Eupatorieae, *Fleischmannia*, Greater Antilles, Guatemala, Haiti, Hispaniola, Honduras, Jamaica, Maya Mountains, Mexico, *Mikania*, Peru, Río Cenepa, South America, West Indies.

The following new species of *Ageratina* Spach, *Fleischmannia* Sch. Bip., and *Mikania* Willd. (Eupatorieae) were each encountered either during routine determination efforts or while filing herbarium specimens. Each novelty described herein is positioned in a genus validated legitimately in the 1800s, although of these three genera only consistently 4-flowered monolithic *Mikania* has been recognized continuously since its inception (King & Robinson 1987). Although *Ageratina* and *Fleischmannia* were resurrected more than four decades ago (King & Robinson 1970a, 1970b) and differ from *Eupatorium* L. by glabrous style bases, they are nevertheless still usually thought of as segregates of the Linnaean genus. Perhaps not coincidentally, each of the novelties belongs to a very speciose genus — *Ageratina* having about 280 species, *Fleischmannia* about 95 species, and *Mikania* about 430 species.

AGERATINA NUBICOLA Pruski & Clase, sp. nov. Figs. 1–3. **TYPE: DOMINICAN REPUBLIC.** Santiago. Municipio San José de Las Matas: Cordillera Central, comunidad Mata Grande, Loma La Hamaca, Parque Nacional Armando Bermúdez, 2500–2600 m, 2 Dec 2001, *T. Clase, R. Ramírez, M. Pérez, & M. Calzada 3188* (holotype: MO; isotype: JBSD).

Fruticosa circiter 1.8 m alta; caules hexagoni distale valde hispido-tomentosi vix resinosi; folia opposita petiolata, lamina 2.5–4.5 × 1.3–2.5 cm elliptico-ovata pinnatim venosa serrulata vel crenulata supra glabra subtus valde sericeo-tomentosa; capitulescentia 3–5 × 5–6 cm dense corymbiformi-paniculata; pedunculi 1–3 mm longi; capitula discoidea 4.3–5.3 mm alta; involucrum campanulatum 2.5–3.5 mm diam.; phyllaria 2-seriata subimbricata subaequalia 5–6, 2–3 × 1–1.5 mm valde hispido-tomentosa; flosculi disci 5–8; corollis 2.5–3 mm longis infundibuliformis, tubo glandulifero, lobis 0.5–0.7 mm longis; cypselae 1.6–2 mm longae; setae pappo 2.5–3 mm longae.

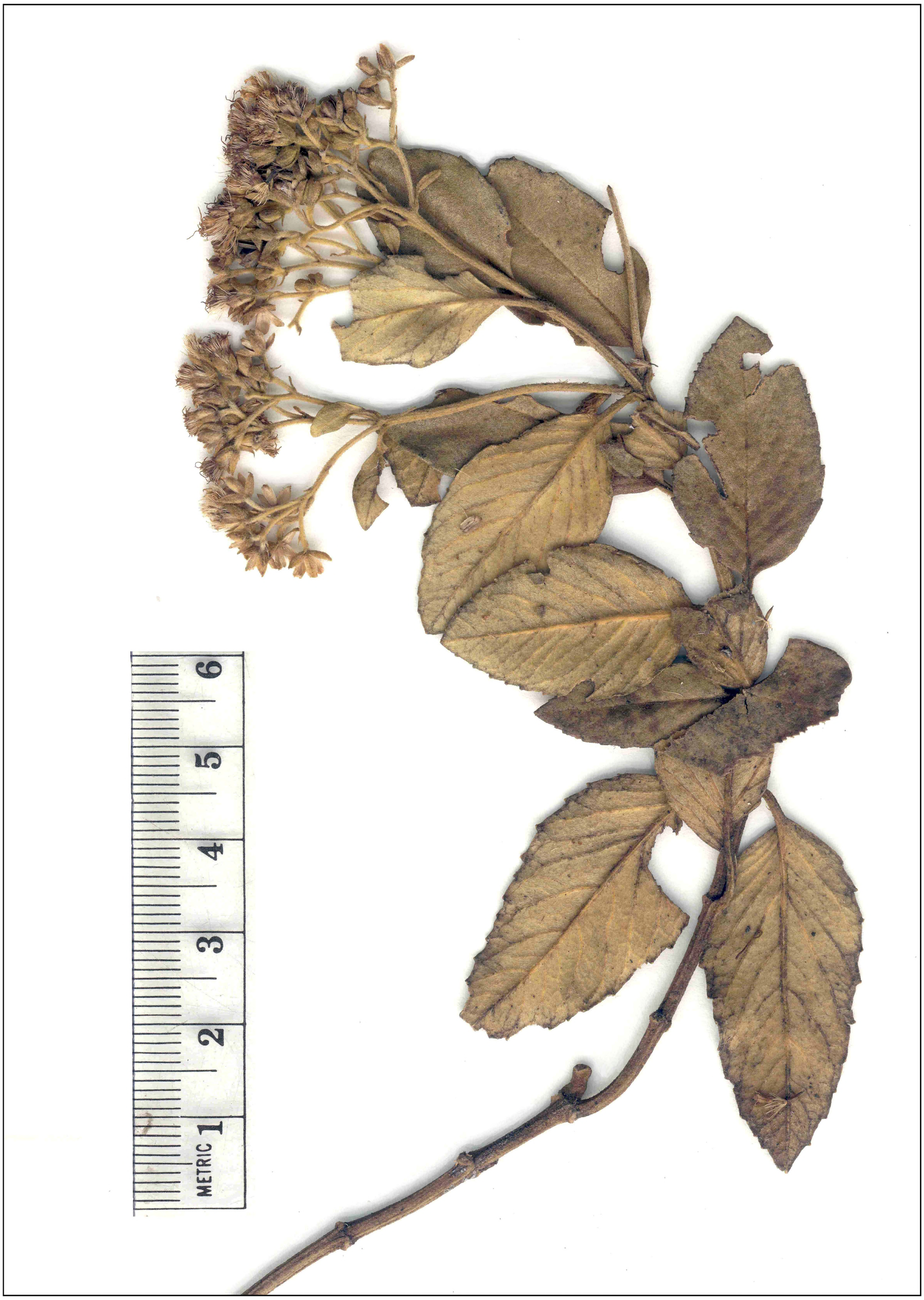

Figure 1. *Ageratina nubicola* Pruski & Clase. Photograph of an isotype showing the pinnately veined discolorous leaves sericeous-tomentose abaxially and the densely hispid-tomentose stems, peduncles, and phyllaries. (*Clase et al. 3188*).

Shrubs ca. 1.8 m tall; stems hexagonal, faces 1-striate between costae, densely hispid-tomentose to proximally densely hirtellous, sometimes very slightly resinous, leafy at anthesis, internodes about half as long as leaves; herbage with simple trichomes, never stipitate-glandular, trichomes antrorse or those of capitulescence branchlets and peduncles often patent. **Leaves** opposite, petiolate; blade 2.5–4.5 × 1.3–2.5 cm, elliptic-ovate, thickly chartaceous or subcoriaceous, pinnately veined, 7–9 straight to slightly curving main secondaries per side diverging from midrib at ca. 45–55°, veins not obviously impressed adaxially, surfaces discolorous, adaxial surface green, glabrous, glutinous, abaxial surface ochraceous, densely sericeous-tomentose, base obtuse, margins serrulate to crenulate with 5–11 teeth per side, apex acute; petiole 0.4–0.7 cm long, densely hispid-tomentose. **Capitulescence** 3–5 × 5–6 cm, terminal, tightly corymbiform-paniculate, broadly rounded on top, slightly exserted from subtending leaves, few-bracteolate, branchlets densely hispid-tomentose, bracteoles 1–3 mm long, lanceolate, densely hispid-tomentose; peduncles 1–3 mm long, densely hispid-tomentose. **Capitula** discoid, 4.3–5.3 mm tall; involucre campanulate, 2.5–3.5 mm diam., much shorter than florets; phyllaries 2-seriate, subimbricate, subequal to slightly unequal, 5–6, 2–3 × 1–1.5 mm, elliptic-ovate or outer 1 or 2 elliptic-lanceolate, spreading with age but mostly persistent, stiffly chartaceous, green throughout or distal margins purplish, densely hispid-tomentose, margins not scarious, apex acute to more commonly obtuse to rounded; receptacle flat, epaleate. **Disk florets** 5–8; corolla 2.5–3 mm long, funnelform, cream-colored or pinkish, tube ca. 1 mm long, glandular, limb glabrous or lobes sometimes very slightly glandular or setulose, throat longer than lobes, lobes 0.5–0.7 mm long, triangular-lanceolate, inner surface of lobes papillose-mamillose; anthers 0.7–0.8 mm long, thecae cordate basally, auricles obtuse, anther collar cell walls (Fig. 2A) weakly beaded-thickened, both vertical and transverse endothecial cell walls (Fig. 2B) thickened irregularly, appendages about as long as wide, apex obtuse to rounded; style base cylindrical to slightly dilated, glabrous, branches ca. 1.5 mm long, appendages cylindrical, short-papillose. **Cypselae** (not fully mature) 1.6–2 mm long, glandular, also sparsely setose, faces and angles brownish, concolorous, gradually narrowed basally to a narrowly annular carpopodium; pappus bristles many, 2.5–3 mm long, about as long as corollas, stramineous, scabrid-barbellate.

Distribution and ecology. This apparently regional endemic is known only from the type collection made at 2500–2600 meters elevation on Loma La Hamaca in the north-central Cordillera Central of the Dominican Republic (Fig. 3), about 20 kilometers north of Pico Duarte (elev. 3087 meters), the tallest mountain in the West Indies. *Ageratina nubicola* occurs in cloud forests (whence the epithet) and is known to flower in December.

Ageratina was included within a broadly defined *Eupatorium* by Bentham and Hooker (1873) and Robinson (1913). The Colombian species of *Ageratina* were spread variously among *Eupatorium* sections *Subimbricata* and *Eximbricata* in the key of Robinson (1918). Greene (1903) was the first to circumscribe *Ageratina* in the broad modern sense (King & Robinson 1970b) and including both temperate and tropical elements, but he did so under *Kyrstenia* Necker. However, Necker's Elementa Botanica is listed in the Code (Appendix VI) as an oppressed work, rendering his *Kyrstenia* invalid and *Ageratina* as the earliest available generic name. Although Coulter (1895) described *Mallinoa* J.M. Coult. and *M. corymbosa* J.M. Coult. (synonyms, respectively, of *Ageratina* and *A. muelleri* (Sch. Bip. ex Klatt) R.M. King & H. Rob., fide King & Robinson 1987) eight years before Greene's work, Coulter was misled by what he interpreted as sagittate anther thecae bases (the thecae bases are actually cordate fide Robinson 1913) and doubtfully ascribed his monotypic *Mallinoa* to tribe Inuleae, his genus approaching Greene's conglomerate in neither species numbers nor clarity.

The species of *Ageratina* from Hispaniola were treated by Liogier (1996) within a broadly defined *Eupatorium*, but *Ageratina* differs most notably by its phyllaries subequal or nearly so and by its glabrous style base. Among species of *Ageratina* from Hispaniola, *A. nubicola* by its pinnately

veined leaves resembles *A. dictyoneura* **(Urb.) R.M. King & H. Rob.,** *A. illita* **(Urb.) R.M. King & H. Rob., and** *A. urbanii* **(Ekman ex Urb.) R.M. King & H. Rob.** *Ageratina nubicola* **differs from both** *A. dictyoneura* **and** *A. illita* **by discolorous (vs. concolorous) leaves densely tomentose (vs. glabrous or glutinous) abaxially and from** *A. urbanii* **by distally densely hispid-tomentose (vs. glabrous to puberulent), weakly or non-resinous (vs. resinous) stems, densely hispid-tomentose (vs. glabrous) phyllaries, and glandular and sparsely setose (vs. glabrous) cypselae. As an aid to identification of** *A. nubicola*, **we provide below a key to Hispaniolan species of** *Ageratina*.

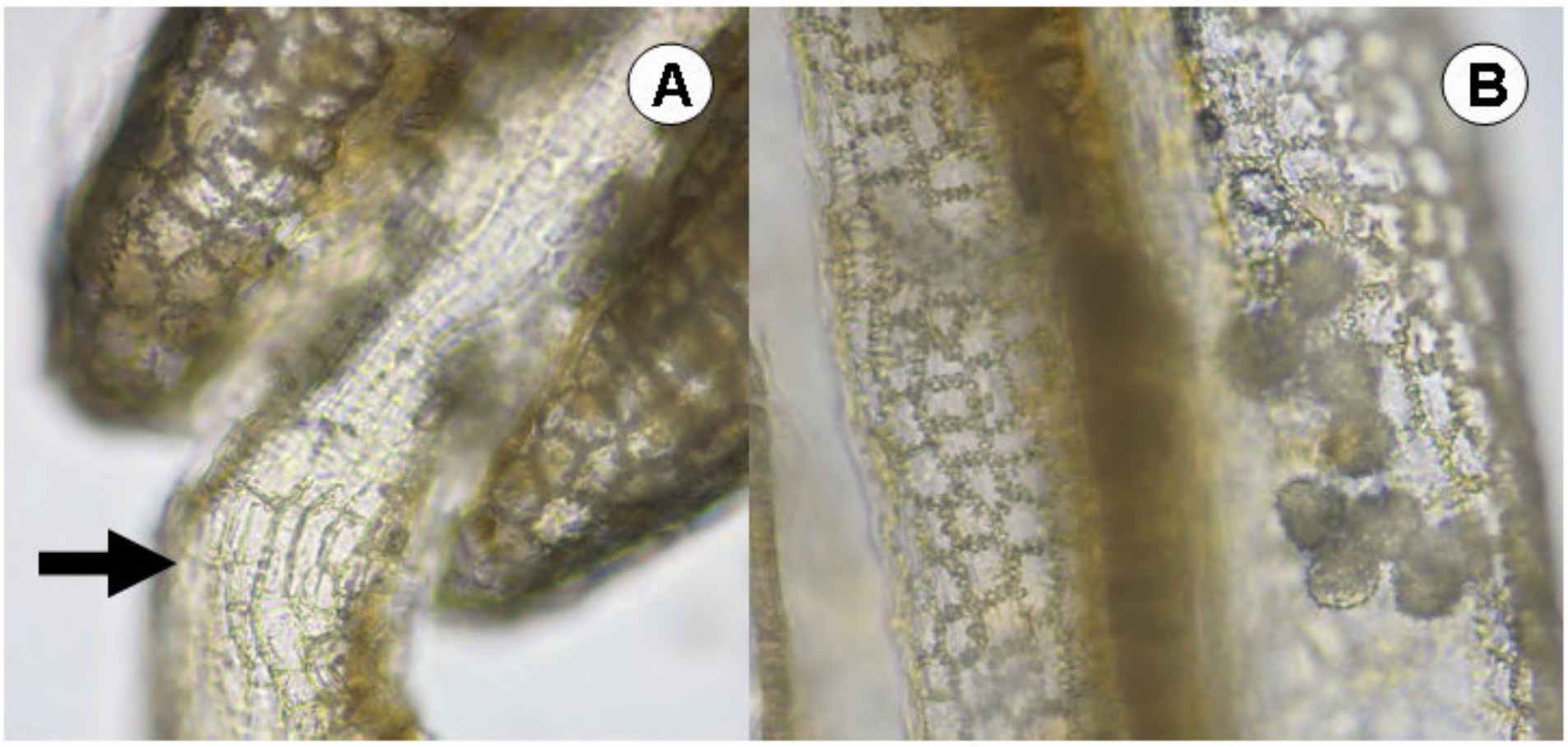

Figure 2. *Ageratina nubicola* Pruski & Clase. Photographs of anthers and their cellular details. A. Anther base showing cordate thecae with obtuse auricles and weakly beaded-thickened cell walls (arrow) of the anther collar. B. Endothecial tissue showing irregularly thickenings on both the vertical and transverse cell walls. (*Clase et al. 3188*).

Key to the species of *Ageratina* known or expected in Hispaniola

1. Leaf blades 3-nerved from near base.

2. Peduncles stipitate-glandular (Mexico, weedy in Jamaica, South America, southern Europe, and the paleotropics, expected in Hispaniola) **Ageratina adenophora** (Spreng.) R.M. King & H. Rob.

2. Peduncles not stipitate-glandular (Bahamas, Mexico, and in the Greater Antilles in Cuba and Hispaniola) ..... **Ageratina havanensis** (Kunth) R.M. King & H. Rob.

1. Leaf blades pinnately veined.

3. Leaf surfaces concolorous, glabrous or glutinous abaxially.

4. Leaves lanceolate to oblanceolate; cypselae eglandular, setulose (Dominican Republic and Haiti) ..... **Ageratina dictyoneura** (Urb.) R.M. King & H. Rob.

4. Leaves elliptic to elliptic-ovate; cypselae glandular, otherwise glabrous (Dominican Republic and Haiti) ..... **Ageratina illita** (Urb.) R.M. King & H. Rob.

3. Leaf surfaces discolorous, densely tomentose abaxially.

5. Stems densely hispid-tomentose to proximally densely hirtellous, weakly or not resinous; leaf base obtuse, margins serrulate to crenulate with 5–11 teeth per side; phyllaries densely hispid-tomentose; cypselae glandular and sparsely setose (Dominican Republic)
..... **Ageratina nubicola** Pruski & Clase
5. Stems glabrous to puberulent, resinous; leaf base broadly obtuse to rounded, margins serrate to crenate with 15–30 teeth per side; phyllaries glabrous; cypselae glabrous (Haiti)
..... **Ageratina urbanii** (Ekman ex Urb.) R.M. King & H. Rob.

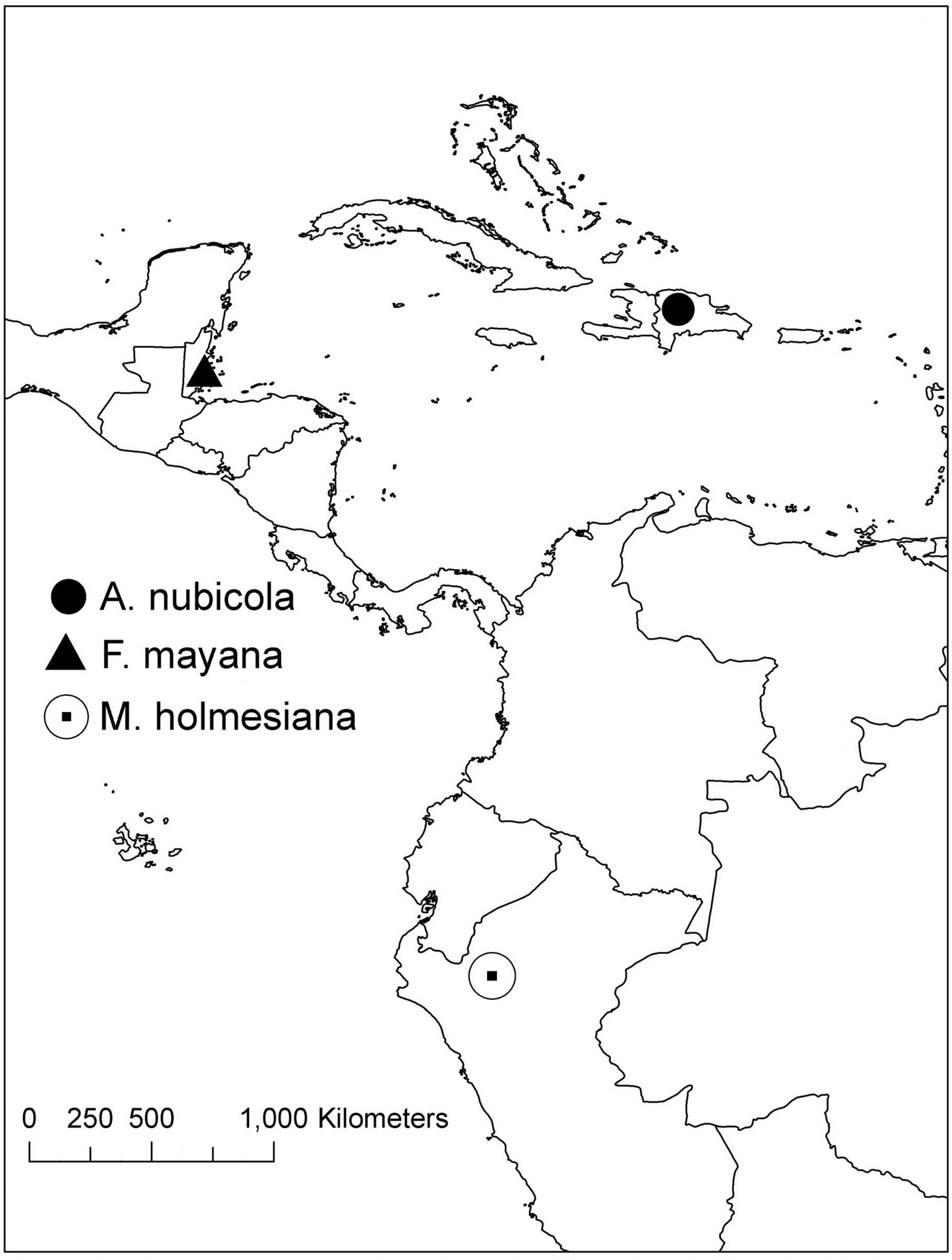

Figure 3. Distribution map showing localities of *Ageratina nubicola* Pruski & Clase (dot), *Fleischmannia mayana* Pruski (triangle), and *Mikania holmesiana* Pruski (bulleted circle).

FLEISCHMANNIA MAYANA Pruski, sp. nov. Figs. 3–6. **TYPE: BELIZE.** Western slope of Victoria Peak in the Cockscomb Range of the Maya Mountains, steep rock face, 16° 48' 43" N, 88° 37' 14" W, 1080 m, 18 Nov 2006, S.W. *Brewer & M. Pau 3349* (holotype: MO; isotypes: BRH, NY).

Herba procumbens usque 30 cm alta inferne foliata; caules subglabri; folia opposita petiolata, lamina 4–7 × 5–9 mm pedata 3–7-lobata basaliter 3-nervata supra sparse hirsuto-pilosa subtus glandulosa subglabra, petiolo 3–7 mm longo; capitulescentia laxe cymosa; pedunculi 7–20(–35) mm longi; capitula discoidea 5–6 mm alta; involucrum campanulatum 5–7 mm diam.; phyllaria 2–3-seriata subimbricata aliquantum gradata 2–3 × 1.5–2 mm oblonga glabra; flosculi disci 23–30; corollis 2.2–2.3 mm longis campanulatis, tubo 0.5–0.6 mm longo valde nervato, lobis 0.4–0.5 mm longis deltatis frequenter pauciglandulosis; cypselae 1.2–1.3 mm longae; setae pappo 8–11, 1.4–1.7 mm longae haud contiguata.

Delicate procumbent perennial epipetric herbs rooting at the proximal nodes, with ascending apices, procumbent portion 5–20 cm long, moderately leafy with internodes 0.5–2.2 cm long, ascending portions 15–30 cm tall, unbranched below capitulescence, remotely leafy, internodes 3–8 cm long; stems subglabrous, subterete, striate. **Leaves** opposite, petiolate; blade (Fig. 5A, E) 4–7 × 5–9 mm, pedate, deltate in outline, chartaceous, 3–7-lobed, 3-nerved from very base, the lateral veins usually dichotomous near base, base subtruncate to subcordate, margins broadly and obtusely lobed about 1/3–1/2 of the distance to midrib, lobes to ca. 2 mm long, each proximal marginal primary lobe often shallowly 2-parted and more or less directed laterally, central lobe often shallowly 3-parted and lobules more or less directed forward, adaxial surface sparsely hirsute-pilose, abaxial surface glandular, otherwise subglabrous; petiole 3–7 mm long. **Capitulescence** 4–7 × 3–5 cm, openly and laxly cymose, 3–11-capitulate, held well above subtending leaves on basically unbranched leafless stalks, ultimate branches few, subequal; peduncles 7–20(–35) mm long, sparsely hirsutulous-pilosulose, 1–3-bracteolate, bracteoles 1.5–3 mm long, linear-lanceolate. **Capitula** discoid, 5–6 mm tall; involucre campanulate, 5–7 mm diam.; phyllaries 12–18, primary phyllaries 2–3-seriate, subimbricate to sometimes nearly eximbricate, subequal to slightly graduated with the outer > ½ as long as the inner (Fig. 5B), 2–3 × 1.5–2 mm, oblong, chartaceous-scarious, bicostate proximally, glabrous, apex obtuse to rounded, a few narrow irregularly disposed ascending to spreading outer phyllaries also typically present; receptacle convex, epaleate. **Disk florets** 20–23; corolla 2.2–2.3 mm long, campanulate (Fig. 5C), white (Fig. 5F), glabrous or lobes usually sparsely glandular, tube 0.5–0.6 mm long, dilated at base, thickly ribbed, limb abruptly ampliate, lobes 0.4–0.5 mm long, deltate, veins intramarginal, faint, minutely papillose-roughened within; anthers ca. 0.5 mm long, anther collar cell walls (Fig. 6B) densely annulated (transversely banded), both vertical and transverse endothecial cell walls thickened irregularly, apical appendage (Fig. 6A) slightly broader than long, obtuse to broadly rounded at apex; style base cylindrical, glabrous, trunk glabrous, branches 1.3–1.5 mm long, appendage slightly clavellate. **Cypselae** 1.2–1.3 mm long, shorter than corollas, 5-ribbed, faces and ribs concolorous, black (Fig. 5D) at maturity, glabrous or sometimes sparsely glandular apically, carpopodium ca. 0.1 mm long, stopper-shaped with distinct distal rim, stramineous; pappus of 8–11 persistent bristles, 1.4–1.7 mm long, slightly unequal with a few slightly shorter, non-contiguous at base (Fig. 5D), reaching to about base of corolla lobes, stramineous, scabridulous, narrow apically.

Distribution and ecology. This narrow endemic is known only from the type collection made at 1080 meters elevation on moderately steep rock faces in full sun in the Maya Mountains (whence the epithet) in Belize (Fig. 3). *Fleischmannia mayana* is known to flower only in November and was seen only once during the extensive field work of Steven Brewer, who kindly submitted for identification his collection to the first author.

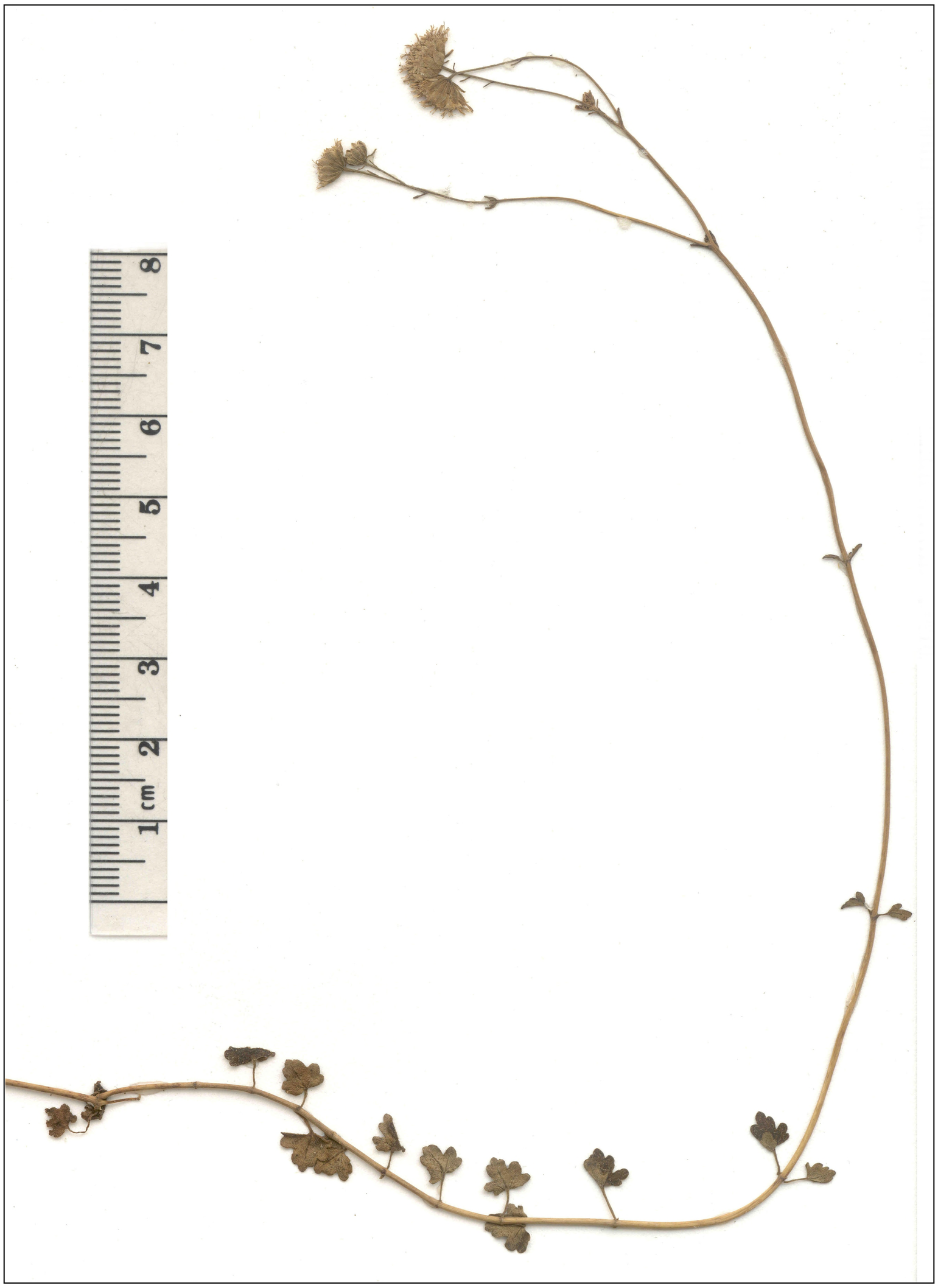

Figure 4. *Fleischmannia mayana* Pruski. Photograph of an isotype showing the procumbent stems with leaves mostly proximal. (*Brewer & Pau 3349*).

Fleischmannia, by virtue of its type having a pappus of 5 bristles only, was recognized by Bentham and Hooker (1873) and Robinson (1906, 1913) as distinct from *Eupatorium*. Bentham and Hooker (1873) and Robinson (1906, 1913), however, recognized *Fleischmannia* as containing only two species, whereas King and Robinson (1970a) transferred 50+ species from *Eupatorium* to a restructured *Fleischmannia*. Although *F. rivulorum* (B.L. Rob.) R.M. King & H. Rob., the generic disposition of which Robinson (1926) said was not "entirely satisfactory," was included in the expanded *Fleischmannia* sensu King and Robinson (1970a, 1987), all species of either generic concept possess characteristic, albeit not diagnostic, strongly ribbed corolla tubes.

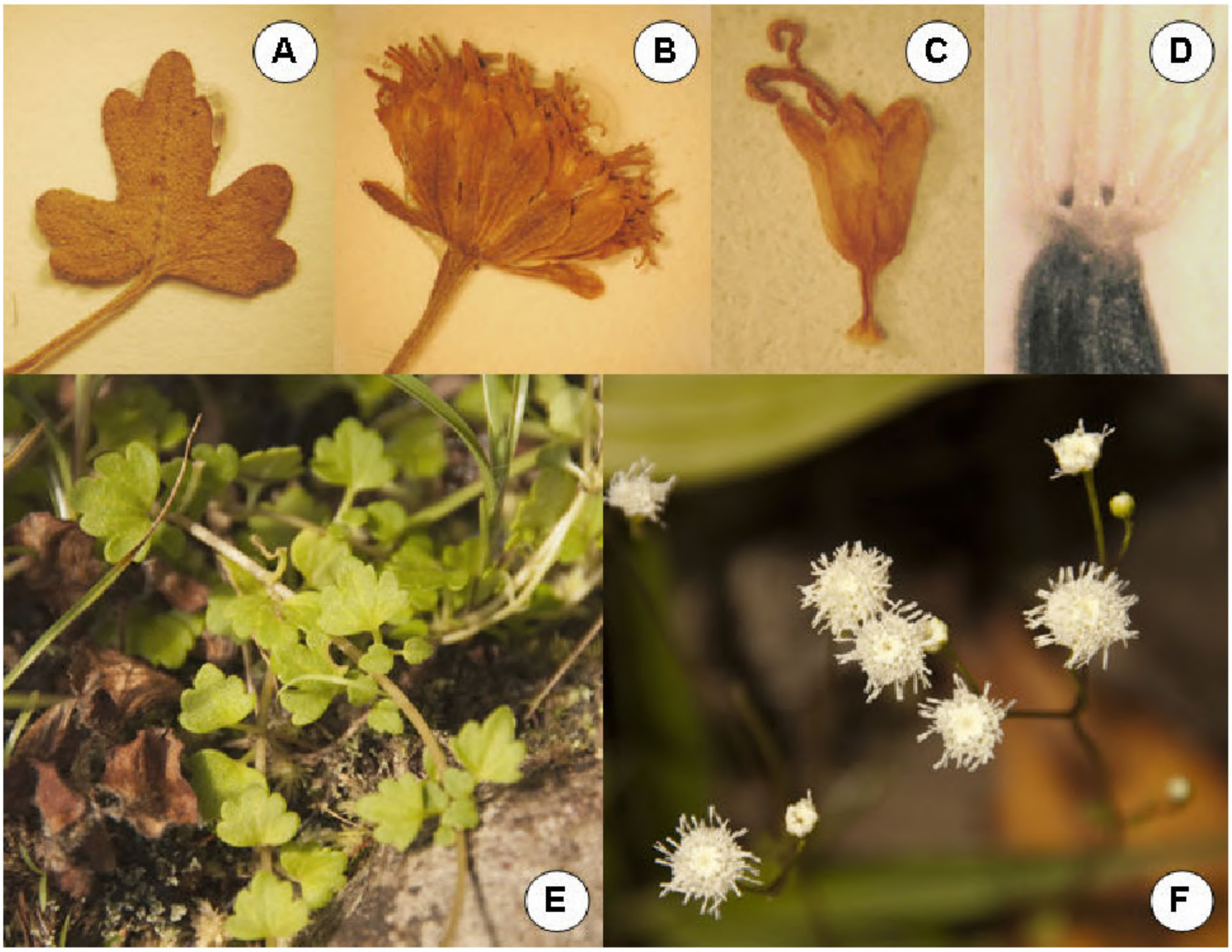

Figure 5. *Fleischmannia mayana* Pruski. A. Leaf showing lobing, venation, and glandular abaxial blade surface. B. Capitulum showing oblong subequal bicostate primary phyllaries. C. Campanulate corolla showing strongly ribbed tube. D. Cypsela showing 10 pappus bristles non-contiguous basally. E. Proximal stem leaves. F. Capitulescence from above. (A–D from an isotype, E–F field photographs taken by Steven Brewer; all from *Brewer & Pau 3349*).

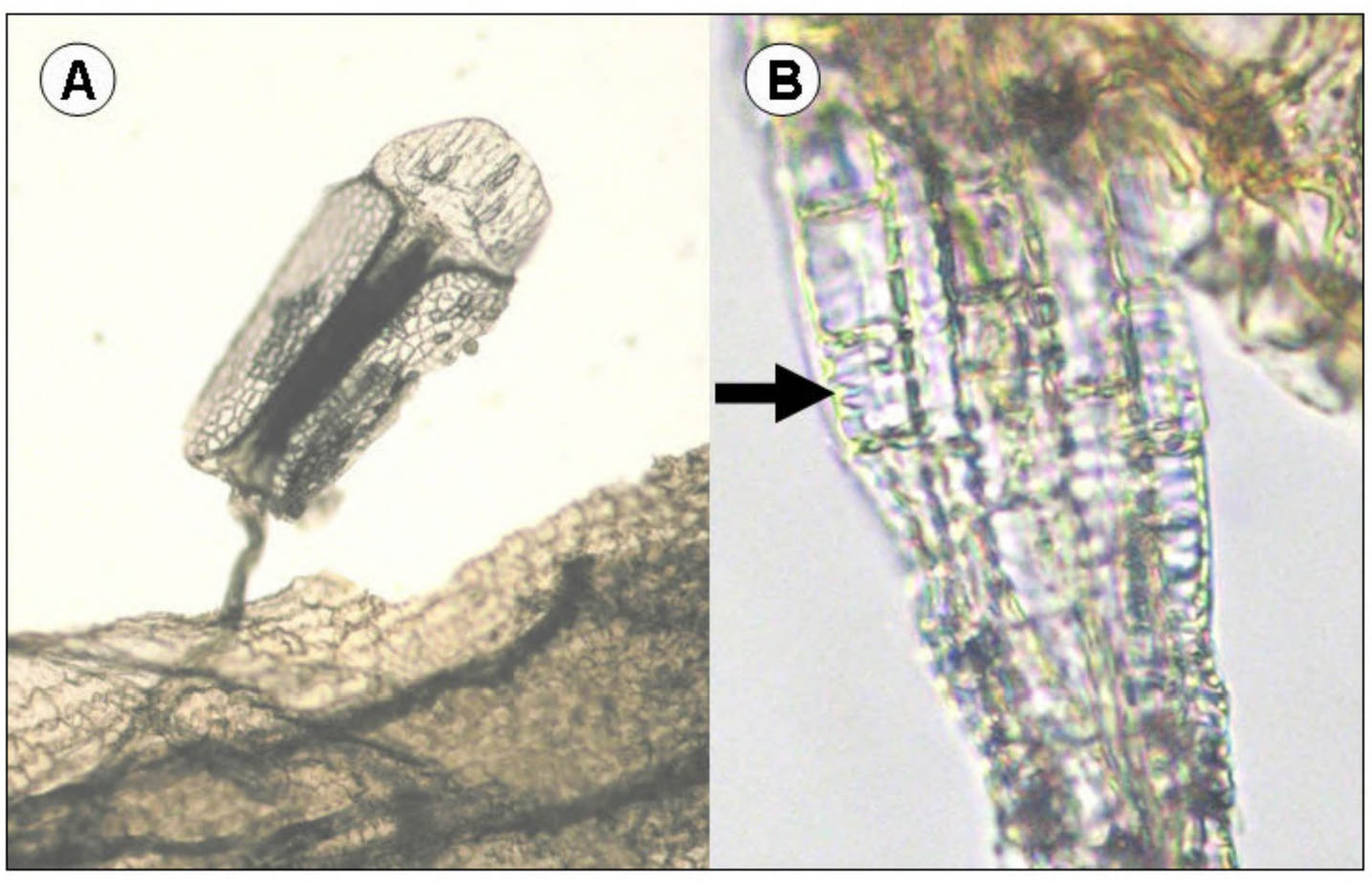

Figure 6. *Fleischmannia mayana* Pruski. Photographs of anthers and their cellular details. A. Anther showing the broad apical appendage with rounded apex. B. Densely annulated (transversely banded) cell walls (arrow) of the anther collar. (*Brewer & Pau 3349*).

This new species is referable to *Fleischmannia* by the thickly ribbed corolla tube character (Fig. 5C), as well as by basally non-contiguous pappus bristles (Fig. 5D), and stopper-shaped carpopodia. The placement of this species in *Fleischmannia* is supported further by microcharacters of densely annulated anther collar cell walls and minutely papillose-roughened corolla lobe inner surfaces. Although in *F. mayana* the corollas (Fig. 5C) are clearly campanulate (vs. usually narrowly funnelform) and the anther appendages (Fig. 6A) are slightly broader than long (vs. usually slightly longer than wide), thereby testing the limits of *Fleischmannia,* other technical generic features (e.g., anther collar cell walls densely annulated and stopper-shaped carpopodia) are not violated.

Among the 30 or so Central American species of *Fleischmannia* (King & Robinson 1987; Robinson 1991), *F. mayana,* by its delicate herbaceous habit, lobed leaves, and laxly cymose capitulescence, keys to (Williams 1976) and vaguely recalls *F. carletonii* (B.L. Rob.) R.M. King & H. Rob. *Fleischmannia carletonii*, however, is a totally different Guatemalan and Honduran species with much larger deeply 2–3-pinnately dissected leaves with linear blade segments and cypselae with about 20 basally contiguous pappus bristles. *Fleischmannia mayana*, by its few non-contiguous pappus bristles and lax paucicapitulate cymose capitulescences, resembles the generitype *F. arguta* (Kunth) B.L. Rob., but *F. mayana* differs by many features not the least of which are the much longer never stipitate-glandular peduncles, fewer and oblong phyllaries, and the campanulate corollas. Balick et al. (2000) listed three species of *Fleischmannia* occurring in Belize, and among them *F. blakei* (B.L. Rob.) R.M. King & H. Rob. is similar to the new species in habit and habitat preferences, but not overly similar otherwise. Other Central American openly corymbiform perennial Fleischmannias all are larger plants and basically have non-lobed lanceolate to ovate leaves, thereby differing from *F. mayana*. Representative species of this group, e.g., *F. imitans* (B.L. Rob.) R.M. King & H. Rob. and *F. sideritides* (Benth.) R.M. King & H. Rob., are often epipetric rhyacophilous herbs, and it is perhaps no coincidence that *F. mayana* too is epipetric.

MIKANIA HOLMESIANA Pruski, sp. nov. Figs. 3, 8. **TYPE: PERU.** Amazonas. Bagua. Dtto. Imaza: Quebrada Almendra, Cerro Tayu, 5° 15' 56" S, 78° 22' 07" W, 1200 m, 20 Jul 2004, *R. Rojas, R. Vasquez, & R. Apanu 3165* (holotype: MO; isotypes: BAYLU, USM).

Plantae volubiles; caules dense pubescentes vel dense villosi; folia opposita petiolata, lamina 2.5–6.3 × 1.3–2.9 cm lanceolata vel lanceolato-ovata glandulosa, supra pubescentia subtus dense villosa; capitulescentia 5–9 × 8–10 cm corymbiformi-paniculata capitula ternata sessilia vel subsessilia; capitula discoidea 7–8 mm alta; involucrum cylindricum circiter 2 mm diam.; phyllaria 4–5 × 0.8–1.1 mm lanceolata; bractea subinvolucri 3–5 × 1–1.8 mm spatulata vel oblonga; flosculi disci 4; corollis 3.4–3.9 mm longis anguste campanulatis, lobis 1.1–1.2 mm longis late lanceolatis; styli rami longe papillosi; cypselae 4–5 mm longae; setae pappo 3.5–4.5 mm longae.

Herbaceous perennial vines to lianas; stems subterete, densely crisped pubescent to densely villous, pith solid. **Leaves** opposite, petiolate; blade 2.5–6.3 × 1.3–2.9 cm, lanceolate to lanceolate-ovate, stiffly chartaceous, venation arching pinnate from well above base with 1 or 2 pairs of stronger secondary veins usually reaching at least to mid-blade, both surfaces punctate-glandular, the adaxial surface also crisped pubescent, the abaxial surface also densely brownish villous, the base broadly cuneate to obtuse, never decurrent, the margins entire, the apex acute; petiole 0.3–1.3 cm long. **Capitulescence** 5–9 × 8–10 cm, terminal, corymbiform-paniculate and round on top, central axis and branchlets densely crisped pubescent to densely villosulous, ultimately of ternate clusters of sessile or subsessile capitula; peduncles (when present subtending some lateral capitula) to ca. 1(–2) mm long, densely crisped pubescent. **Capitula** discoid, 7–8 mm tall; involucre cylindrical, ca. 2 mm diam., commonly large-bracteate or subinvolucrate; phyllaries 4, 4–5 × 0.8–1.1 mm, in fruit reaching only to the corolla tube, lanceolate, stiffly chartaceous, apices obtuse to rounded, the outer 2 phyllaries crisped-puberulent to villosulous, the inner 2 crisped puberulent medially or distally; subinvolucral

bract 1 per capitulum, ascending, 3–5 × 1–1.8 mm, 1/2 the length to as long as involucre, spatulate to oblong, herbaceous, apex acute to obtuse, abaxial surface crisped-puberulent to villosulous, also sparsely punctate-glandular. **Disk florets** 4; corolla 3.4–3.9 mm long, well-exserted (at least in fruit) from involucre, shorter than mature fruits, narrowly campanulate, sparsely setulose at tube-throat juncture and on lobe apex, tube 1.1–1.2 mm long, never longer than the limb, throat 1.2–1.5 mm long, lobes 1.1–1.2 mm long, broadly lanceolate, erect, slightly shorter than to about as long as the throat; anthers 1.5–1.6 mm long, stramineous, rounded basally; style branches to ca. 2 mm long, appendage long-papillose, papillae 0.05–0.1 mm long, nectary annular, 0.2–0.3 mm long. **Cypselae** 4–5 mm long, at maturity about as long as phyllaries, thus the persistent corolla then almost fully exserted from involucre, sparsely setulose to subglabrous; pappus bristles many, 3.5–4.5 mm long, usually slightly shorter than the cypselae, pale brown.

Paratypes: **PERU**. Amazonas. Bagua. Dtto. Imaza: Tayu Mujaji, Comunidad de Wawas, vegetación pequeña hasta 1.5 m de alto, 900 m, 23 Oct 1997, *Vásquez, Awanash, & Pitug 24677* (MO); Tayu Mujaji, bosque primario, 900–1030 m, 17 Feb 2002, *Vásquez 27609* (MO).

Distribution and ecology. *Mikania holmesiana* is a vine known only from three collections (two of these basically sterile) from 900–1200 meters elevation on the upper slopes and summit of Cerro Tayu (Tayu Mujaji), an isolated sandstone mountain in Dpto. Amazonas in northern Peru (Fig. 3). *Mikania holmesiana* is known to be in late flower and early fruit in July and appears to grow on rocky soil.

Etymology. It is truly a pleasure to name *Mikania holmesiana* for my (jp) good friend and native Louisianan (Holmes 1990b) Dr. Walter C. Holmes, the world authority on taxonomy of *Mikania*. Walter was party to the naming of *M. pruskii* H. Rob. & W.C. Holmes and is very deserving of being commemorated similarly. *Mikania holmesiana* is validated herein so that the name may be used in Walter's revision of *M. guaco-parviflora* species group, which he has otherwise completed.

Mikania, recognized by its 4-flowered capitula and its usually vining habit, is an American-centered genus of about 430 species, with 350+ species being South American endemics. The Peruvian species of *Mikania* were revised by Holmes and McDaniel (1982), who recognized 75 species. More recently, Pruski (2010) credited 88 species of *Mikania* to Peru. *Mikania holmesiana* is described from sandstone Cerro Tayu in the eastern Andes of northern Peru, immediately outside the region covered by Pruski (2010), raising to 89 the number of Peruvian Mikanias counted by the first author.

Mikania holmesiana fits well within the *M. guaco-parviflora* species group originally circumscribed by Robinson (1922a), a group recognized by sessile ternately disposed capitula (Fig. 7A–C) and long-papillose style branch appendages (Walter Holmes, pers. comm.). Indeed, in the treatments of Peruvian Mikanias by Holmes and McDaniel (1982) and Pruski (2010), *M. holmesiana* keys to the *M. guaco-parviflora* species group. Species of this group are routinely keyed out together, as done elsewhere by Robinson (1922b), Holmes (1990a), Pruski (1990, 1997, 2002), and Robinson and Holmes (2008). Within this species group, *M. holmesiana* seems most similar by its large broad subinvolucral bracts more than half as long as the phyllaries to *M. trinitaria* DC. and especially to *M. parviflora* (Aubl.) H. Karst., but it differs from each in herbage vestiture and floral details.

Mikania parviflora is remarkably consistent morphologically throughout its range, having stems subglabrous to puberulent with subappressed trichomes, adaxial leaf surfaces glabrous or nearly so, deltate corolla lobes much shorter than throat, and fruits included within the involucres. *Hurtado & Alvarado 496*, referred to *M. parviflora* by Robinson and Holmes (2008) by ternate large-bracteate

capitula and deltate corolla lobes, has hirsute vestiture and is on the periphery of *M. parviflora*'s sphere; it too perhaps represents yet another undescribed taxon. *Mikania holmesiana* differs from *M. parviflora* (and from *Hurtado & Alvarado 496* as well) by its densely pubescent herbage with crisped trichomes, lanceolate corolla lobes nearly as long as the throat, phyllaries 4–5 (vs. 6–8) mm long, mature fruits often longer than corollas and about as long as phyllaries, and by corollas well-exserted (at least in fruit) from involucre. Additionally, *M. parviflora* is centered in Amazonia where it occurs mostly at low elevations (Pruski 1997), whereas *M. holmesiana* occurs at 900–1200 meters elevation in the eastern Andes. *Mikania holmesiana* thus sticks out like a sore thumb from the well-delimited *M. parviflora*.

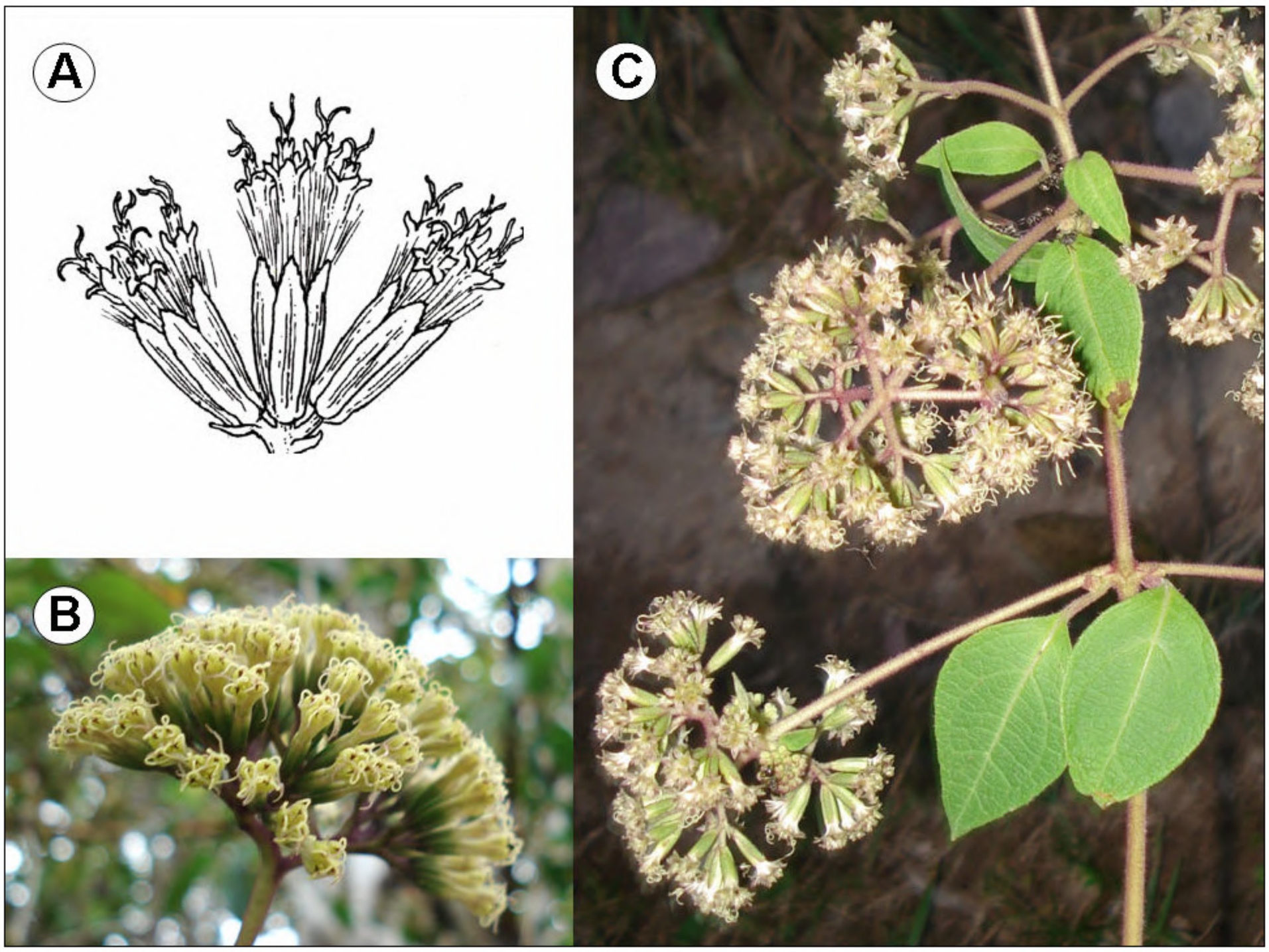

Figure 7. Representative capitulescences of the *Mikania guaco-parviflora* species group showing the ternately disposed terminal clusters of capitula. A. *Mikania guaco* Bonpl. showing small subinvolucral bracts. B. Rounded capitulescence of *Mikania guaco* showing the clusters of capitula in concentric bands (Peru, Loreto, Puente Itaya, km 56 carretera Iquitos–Nauta: *Pruski, Ortiz, & Amasifuen 4346*). C. Lateral capitulescences of *Mikania speciosa* DC. (Peru, Pasco, Oxapampa, Cordillera Yanachaga, Quebrada San Alberto: *Pruski, Ortiz, Castillo, & Rivera 4393*). (A from Pruski 2002, B–C field photographs taken by John Pruski).

Figure 8. *Mikania holmesiana* Pruski. Photograph of an isotype showing densely pubescent to densely villous stems, long-bracteate capitula in ternate clusters, and corollas well-exserted from involucres. (*Rojas et al. 3165*).

Another close congener of *M. holmesiana* with moderately large-bracteate capitula, found among species in the long-lobed corolla lead in the keys to the *M. guaco-parviflora* species group in Robinson (1922a), Holmes and McDaniel (1982), and Pruski (1990, 1997) is *M. trinitaria*. *Mikania trinitaria* is a puberulent to glabrate plant with corolla lobes very much longer than the short throats, thereby clearly differing from *M. holmesiana*. Similar to *M. holmesiana* in the capitulescence structure with ultimate capitula ternately clustered and by proportionally long subinvolucral bracts are Venezuelan *M. steyermarkii* R.M. King & H. Rob. and western Amazonian (Bolivia, Brazil, Ecuador, and Peru) *M. stygia* B.L. Rob. However, each *M. steyermarkii* and *M. stygia* differs from *M. holmesiana* in vestiture of the herbage, by proportionally short corolla lobes, and by smooth to short-papillose style branches, the latter character used by Walter Holmes (pers. comm.) to technically exclude both *M. steyermarkii* and *M. stygia* from the *M. guaco-parviflora* species group.

Carminatia recondita McVaugh, Contr. Univ. Michigan Herb. 9: 384. 1972. (Fig. 9).

Voucher: **HONDURAS.** Copán: Open pinares on hillside above CA11, ca. 5 km W of Ruinas de Copán and ca. 5 km E of El Florido at border with Guatemala, 14°50'23" N, 89°11'08" W, 795 m, 15 Nov 2008, *Pruski, Vega, Ortiz, & Jiménez 4535* (EAP, USCG).

Figure 9. *Carminatia recondita* McVaugh. Photograph showing the nodding cylindrical capitula. (Guatemala, hillsides SSW of Lago de Amatitlán, 5 km NE of Volcán Pacaya: *Pruski, MacVean, & MacVean 4505*).

The three species of *Carminatia* are annual herbs and recognized by their interrupted spiciform capitulescences with clusters of narrowly cylindrical few-flowered capitula and by cypselae with a plumose pappus. While botanizing a few years ago, we collected *C. recondita* on both sides of the Guatemala-Honduras border. Neither the genus nor species, however, were reported for Honduras by McVaugh (1972), Williams (1976), King and Robinson (1987), Turner (1997), or Nelson Sutherland (2008). This marks the first report of *Carminatia* Moc. ex DC. and *C. recondita* in Honduras. Because Williams (1976) noted only *C. tenuiflora* DC. in Guatemala and because of the overall similarity among species of *Carminatia*, it seems useful to supplement this Honduran record with a field photograph (Fig. 9) showing the diagnostic nodding capitula of *C. recondita*. *Carminatia recondita* is further distinguished from *C. tenuiflora* by narrowly funnelform corollas 0.7–1 mm diam. apically and cypselae ≥ 5.5 mm long (McVaugh 1972; Turner 1997). Plants of *C. recondita* at the locality in Honduras were scattered in pine forests and not at all uncommon.

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